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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,609	07/22/2003	Satoshi Seo	12732-087002	5062

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EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
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1774

MAIL DATE	DELIVERY MODE
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05/02/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/623,609

Applicant(s)

SEO ET AL.

Examiner

Camie S. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed February 8, 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 129-200 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 129-200 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/8/07.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed February 8, 2007 are acknowledged.
2. Examiner acknowledges amended claims 129-136.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 129-200 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aziz et al., U.S. Patent Number 6,765,348.

The Aziz reference discloses an organic light emitting device comprising a first electrode (an anode); a light-emitting region comprising an organic luminescent material and a second electrode (column 5, line 20-column 8, line 50). Additionally, the reference discloses that the light-emitting region is situated on and in contact with the anode. The embodiments of the Aziz reference include the light-emitting region comprising an organic luminescent material as a dopant. Also, the reference discloses that the light-emitting region comprises hole transport and electron transport materials as the organic luminescent material (see reference claims).

Reference claims 21 of the reference discloses that the light emitting region can further comprise at least one of a hole transport region adjacent to the anode and an electron transport region

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adjacent to the cathode. The reference discloses that the light-emitting region comprises an organic luminescent material that can be doped; a hole transporting region and an electron transporting region. Aziz discloses that the light-emitting region has thickness of typically 20 nm to about 200 nm. Also, Aziz discloses that the organic light-emitting device can be used in various types of displays such as computer monitors, televisions and other electronic devices (see column 21, lines 55-68). It is disclosed that the hole transport materials and electron transport materials can be used as the organic luminescent material. Column 10 discloses that the light emitting material can be rubrene, anthracene or polyfluorene. Additionally, the reference discloses hole transport materials, electron transport materials, fluorescent materials and phosphorescent materials used as dopants for the organic luminescent material in the light-emitting region (see paragraph 0061-0069). The reference discloses the use of perylene, rubene, aromatic tertiary amines such as 4,4'-bis[N-(3-methylphenyl)-N-phenyl-amino]biphenyl, oxadiazole compounds and tris(8-quinolinolato) aluminum as hole transport and electron transport materials, respectively (see reference claim 28). The reference discloses that the dopant is present in the amount of 0.01 weight percent to about 25 weight percent. Column 16, lines 30-51 of the reference discloses that the fac tris(2-phenylpyridine) iridium can be used as a dopant along with other dopants such as fluorescent dyes, lanthanide metal chelate complexes. Column 20, lines 30-53 (Example 2) of the reference disclose that the hole transport region is about 80 nm thick and the electron transport region is about 80 nm thick. Aziz discloses a dopant in the light emitting region. Aziz does not disclose that the dopant is only in a portion, or central portion of the light-emitting region. With the light emitting region having a hole transport material, electron transport material, luminescent material and dopant, the light

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emitting region acts as a charge carrier and emitter. The dopant being present in a portion of the light emitting region affects the luminescence efficiency of the region when it acts as an emitter. Therefore, it would have been obvious to one of ordinary skill in the art to have the dopant in only a portion of the light-emitting region in order to enhance the emission of the light emitting region that acts as an emitter.

Response to Arguments

5. Applicant's arguments filed February 8, 2007 have been fully considered but they are not persuasive. Applicant argues that the Aziz reference does not describe or suggest a light emitting region comprising a mixed layer of a hole transporting material and an electron transporting material is formed between the hole transporting region and an electron transporting region. Aziz clearly teaches that the light emitting region may comprise a hole transporting material, electron transporting material and a dopant, which is a mixed layer (see column 12, lines 5-35). The term "portion" in the present claims may encompass an entire portion. Aziz reads on the present claims. The rejection is maintained.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RENA DYE
SUPERVISORY PATENT EXAMINER
AU 1774